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ABSTRACT

A study applied the structure of fuzzy logic, a fairly modern development in mathematical set theory, to judicial opinions concerning non-university, public school student publications, from 1975 to 1999. The study examined case outcomes (19 cases generated 27 opinions) as a function of fuzzy logic, and it evaluated interactions between fuzzy logic and the following factors: court level, materials involved, administrative action taken, and chronology of decision. Findings show that in general, courts using fuzzy logic favor administrators, while courts avoiding fuzzy logic favor students. Future research might examine (1) non-university public school student press cases from the early 1960s to the mid-1970s; (2) university cases from the past 40 years; and (3) student-initiated symbolic speech cases. Contains 4 tables of data and 56 notes. Attached are a list of evaluated opinions and case-by-case data for court decisions. (Author/NKA)

Twenty-Five Years of the Fuzzy Factor: Fuzzy Logic, the Courts, and Student Press Law

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This study applies the science of fuzzy logic, a fairly modern development in mathematical set theory, to court opinions concerning non-university, public school student publications, from 1975-1999. It examines case outcomes as a function of fuzzy logic, and it evaluates interactions between fuzzy logic and the following factors: court level, materials involved, administrative action taken, and chronology of decision. Findings show that in general, courts using fuzzy logic favor administrators, while courts avoiding fuzzy logic favor students.

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Twenty-five Years of the Fuzzy Factor: Fuzzy Logic, the Courts, and Student Press Law

Introduction

Although the U. S. Supreme Court supports public education as "a principal instrument in awakening the child to cultural values"¹ and believes that public schools should inculcate in children the "fundamental values necessary to the maintenance of a democratic political system,"² the Court never has addressed in precise terms the restrictions that public school systems may place upon their students' fundamental right of free expression. In fact, beginning in 1969 with *Tinker v. Des Moines Independent School District*,³ the Court during a 19-year period fashioned a set of ill-defined guidelines by which student expression may be governed.

To determine whether these guidelines have affected the meaning of free expression for non-university, public school students, this research examines 25 years of narrowly defined student publication decisions by analyzing them in light of fuzzy logic, a relatively new science. The study reviewed lower court decisions and appellate court decisions from the period 1975-1999 and drew conclusions concerning the relationships between court language and case outcome.

Fuzzy Logic Defined

Fuzzy logic flows from mathematical set theory language, which includes terms such as "binary" and "multivalence." A binary set contains elements that describe two ways to answer a question, and as applied to judicial decisions, might entail distinctions such as "true or false," "legal or illegal," and "liable or not liable." In contrast, a set with "multivalence" offers three or more options for answering questions and designates a vague (or multivalued) group of elements that belong to

the set in differing degrees. As applied to judicial decisions, multivalued sets might include terms such as "material," "substantial," and "reasonable."

In 1965, Zadeh⁴ introduced the term "fuzziness" as an alternative descriptor for "multivalence." A fuzzy set, as used by mechanical engineers for example, refers to gradations of tolerance involved in mechanical decision-making. As applied to climate control, a thermostat set at 72 degrees might activate a heating/cooling system whenever the thermostat registers in the range of 71.5 degrees to 72.5 degrees. The options for answering the question, "At what point should the heating unit or air conditioning unit come on?" vary within half-degree boundaries on either side of 72 degrees.⁵

McNeil and Freiburger⁶ explain that "Fuzzy logic rests on the idea that all things admit of degrees"⁷ and that "...fuzzy logic reflects how people think."⁸ They also identify "hedges," which are terms that modify other fuzzy sets and include such words as very, somewhat, quite, moderately, slightly, and other words that alter a set's range.⁹

Fuzzy Logic and Judicial Decisions

Like mechanical decision-making, judicial decision-making sometimes is cloaked in fuzzy sets. In his history and explanation of fuzzy logic, Kosko¹⁰ notes that "A legal system is a labyrinth of fuzzy rules and fuzzy principles...Here the fuzzy principle holds with more force than anywhere else in our lives. Legal terms and borders are fuzzy."¹¹ He also suggests, "The letter and spirit of the law arise from the split between rules and principles," with rules being precise and principles being vague and abstract and full of exceptions.¹²

Other authors also have commented upon fuzziness in the legal system and in the language of law. Solan¹³ explains why judges do not make good linguists and describes a variety of cases in which judges struggled with the applications of fuzzy legal terms. He cites as one example the word "pattern" (as in "pattern of racketeering activity"), which prompts him to muse that "The problems the [U. S. Supreme] Court faced in construing the word 'pattern' in RICO [prosecutions] are, in fact, unavoidable."¹⁴ Jamar¹⁵ extends this premise beyond any individual case and offers a sweeping indictment of language in the law. He writes, "The inherent fuzziness of language, including the language of the law, means that demands for complete precision are doomed to be perpetually unmet."¹⁶ Levin,¹⁷ on the other hand, embraces ambiguity in the law, noting that "If judicial propositions were clear, precise, innumerable, and consistent, their appeal would be limited to those individuals who agreed with them."¹⁸

Additionally, a few authors have concentrated on fuzziness in specific areas of law. Ikemoto,¹⁹ for instance, addressed the consequences of the fuzzy logic associated with welfare reform laws and their effects on the socio-economic needs of certain minorities. Hadden²⁰ described fuzziness engendered by nuisance law in Michigan, and Rosenbloom²¹ roundly criticized several U. S. Supreme Court justices for using fuzzy language in opinions concerning property law and concerning public employees' freedom of speech. Flynn²² argued that three courts hearing cases stemming from the American with Disabilities Act of 1990 were guilty of fuzzy thinking, and finally, with a specific mention of mathematical set theory and its fuzzy logic, Merritt²³ analyzed a U. S. Supreme Court case involving the Commerce Clause of the U. S. Constitution.

From the above-noted literature, it is clear that theoretical fuzzy logic concepts and practical fuzzy logic concepts have been employed to analyze a variety of legal matters and judicial decisions. No published research, however, has employed the fuzzy logic framework to analyze the evolution of a body of law. Such an analysis might be useful in identifying overall judicial trends and contextualizing individual court decisions, and therein lies the major rationale for analyzing governance of student publications within such a framework.

Fuzzy Logic and U. S. Supreme Court Student Expression Cases

There is no doubt that student press law has been well scrutinized from several angles, including 1) interpretations of court decisions;²⁴ 2) effects on student publications editors, student publications advisers, and high school principals;²⁵ and 3) legal maneuvers to negate U. S. Supreme Court decisions in this legal arena.²⁶ There also is no doubt that such research has been useful to some extent in portraying the realities of student press law as it exists nationwide. But by using the framework provided by fuzzy logic, it is possible to go beyond the traditional approaches to student press law by deconstructing the language of student press law. Reasonably, a good place to begin is with U. S. Supreme Court decisions on this topic.

Specifically, the first relevant student expression case decided by the Court was *Tinker v. Des Moines Independent School District*.²⁷ In this case, involving public school administrators who punished students in junior high school and senior high school who wore black armbands during the December holiday season to protest the hostilities in Vietnam, the Court said, "It can hardly be argued that either teachers or

students shed their constitutional rights to freedom of speech or expression at the schoolhouse gate."²⁸ The Court, however, did not stop there. It also adopted from a lower court the phrase "material and substantial disruption" as a guideline administrators could follow in governing such speech, and added to it a condition that the expression not collide with the rights of other students to be secure and to be let alone (invasion of the rights of others, as it is frequently defined).

*Black's Law Dictionary*²⁹ defines "material" as "Important; more or less necessary; having influence or effect; going to the merits." It defines "substantial" as "Of real worth and importance; of considerable value; valuable." And it defines "substantial evidence" (which one might expect school administrators to produce as support for "substantial disruption") as "Such evidence that a reasonable mind might accept as adequate to support a conclusion." While the definition of "material" is relatively straightforward, it does contain some fuzzy characteristics: How necessary is "more or less necessary"?; How much "influence or effect" is enough to trigger its application? "Substantial" and "substantial evidence" also are fuzzy: How can "real worth" and "considerable value" be defined?; How does "a reasonable mind" know when there is "adequate support"?

Although it might be seen as nit-picking, the language exercise above shows how degrees of interpretation may affect decisions made by school administrators and courts of law. Another question inadvertently raised (though not articulated) by the *Tinker* Court is "How much like speech does conduct have to be before it is protected by the First Amendment?" The Court said the conduct of the students "...was closely akin to 'pure speech'...",³⁰ but that muddied the issue further by modifying an already fuzzy phrase (akin to) with a hedge (closely).

Curators.³¹ Here, it reiterated language crafted in *Healy v. James*,³² a 1972 case in which a unanimous Court ruled that a university president had no evidence that recognizing a campus chapter of Students for a Democratic Society would cause disruption on the campus. In its finding against the university in the *Papish* case, the Court again "...recognized a state university's undoubted prerogative to enforce reasonable rules governing student conduct,"³³ but it also said "...the mere dissemination of ideas—no matter how offensive to good taste—on a state university campus may not be shut off in the name alone of 'conventions of decency.'"³⁴ *Papish* involved the expulsion of a graduate student who published allegedly indecent material in an underground newspaper distributed on campus.

Black's Law Dictionary defines "reasonable" as "Fair, proper, just, moderate, suitable under the circumstances." Once more it might be noted that such words are fraught with fuzz: How fair is "fair"? According to what standard is something "proper" or "just"? What are the boundaries of "moderate"? How many ways may "suitable under the circumstances" be defined? Yet university administrators may enforce "reasonable rules governing student conduct." While seeming to steadfastly uphold student free expression rights, at least in the college environment, the Court in the early 1970s actually began to define such rights in the context of what it earlier had referred to as the objectives of public education, i.e., the inculcation of fundamental values necessary to the maintenance of a democratic political system, and the habits and manners of civility essential to a democratic society.³⁵

In the time between *Papish* and the next U. S. Supreme Court student expression case in 1986 (*Bethel School District No. 403 v. Fraser*³⁶), the Court decided several public school cases in which its opinions stressed the "inculcation of values"

theme.³⁷ When it decided *Bethel*, the Court no longer was using the phrase "material and substantial disruption"; instead, the majority opinion penned by Chief Justice Burger spewed forth a litany of references both to "inculcation of fundamental values" and to the desirability of "civility" in speech. Ultimately basing its decision on those themes, the Court upheld the public school administration's right to punish a high school student for using sexually suggestive language in a speech given at a school assembly.

Although educated people may be able to agree upon some form of meanings for terms such as "fundamental values" and "civility," it clearly might be argued that these and similar terms encompass a broader universe of potential meanings than do the terms "material" and "substantial." The former terms are more fuzzy than the latter terms, so in the arena of student expression, the Court's language in little more than a decade had evolved from moderately fuzzy to very fuzzy. Two years after *Bethel*, the evolution reached its extreme.

In 1988, the Court decided *Hazelwood School District v. Kuhlmeier*,³⁸ a case involving administrative censorship of articles in a school-sponsored student newspaper produced in conjunction with a journalism class. In ruling against student complaints of First Amendment infringement, the Court distinguished its holding in *Hazelwood* from its holding in *Tinker* by noting, "Accordingly, we conclude that the standard articulated in *Tinker* for determining when a school may punish student expression need not also be the standard for determining when a school may refuse to lend its name and resources to the dissemination of student expression."³⁹ The Court also said administrators could exercise editorial control over the style and content of student speech in school-sponsored activities,

so long as their actions were "reasonably related to legitimate pedagogical concerns."⁴⁰

At this point, the Court employed even fuzzier terms than it had used earlier. Combining "reasonably related" with "legitimate pedagogical concerns" created a universe of unprotected speech that is practically all-encompassing. What cues may lower courts take from such language use? How have those courts treated student expression since the *Tinker* standard was enunciated? As stated in the introduction, identifying overall judicial trends and contextualizing individual court decisions constitute the rationale for analyzing, within the fuzzy logic framework, the last 25 years of court decisions concerning governance of publications produced by non-university, public school students.

Methodology

To determine the effects of the evolution of U. S. Supreme Court language on the status of language used in other court decisions involving non-university, public school student publications, all reported lower court decisions (lower, that is, than the U. S. Supreme Court) involving student media in such schools, in the period 1975-1999, were analyzed. State and federal cases were located by searching pertinent categories in the *Decennial Digest* for the years 1975-97 and by searching the Lexis data base for the years 1995-99. This period was chosen because it was thought that by 1975, judges writing opinions in this legal area would have been aware of the *Tinker* standard and of the language used in *Healy* and *Papish*.

To be included in the study, the first reported decision in the case had to have been reported by 1975; thus if a case was first reported before 1975, even though appeals were reported in 1975 or later, the case was not included in the analysis.⁴¹ All reported decisions of individual cases were included if the issue being decided

involved administrative prior restraint or censorship of student-produced materials, or administrative punishment of students for publishing or distributing student-produced materials. Student cases involving issues such as hair length, dress codes, and a multitude of other student behavior issues were excluded.⁴² Additionally, to be considered for this project, legal action had to have been initiated by a student, as opposed to a non-student or a teacher.

As the major part of the analysis, language used in the court's reasoning was examined in each case for degree of fuzziness and for its relationship to the final outcome. A court's rationale was considered to be fuzzy logic if it relied upon phrases such as "material and substantial disruption," "reasonable," "inculcation of fundamental values," or "legitimate pedagogical concerns," whether or not specific U. S. Supreme Court decisions were mentioned. Thus court rationale based on fuzzy language in state statutes or other sources also was categorized as fuzzy logic.

Other factors used to categorize opinions included court level, materials involved, administrative action, and date of decision. Opinions were grouped as either trial court opinions or appellate court opinions, and materials were designated as either official, student-produced school publications (whether or not they were produced as part of a class) or unofficial, student-produced publications such as underground newspapers and leaflets. Cases involving distribution of materials not produced by students were not included in this study.

Administrative action was categorized in terms of prior review/censorship or post-publication/distribution punishment, with threats being counted the same as actual action. Concerning date of decision, cases were grouped as either pre-*Bethel* (1975-1986) or post-*Bethel* (1987-1999) because the *Bethel* opinion, with its emphasis

on both "inculcation of values" and on "civility," added such a high degree of fuzziness to *Tinker's* "material and substantial disruption" standard.⁴³

Results

A search of the legal databases yielded 19 separate cases in which the first reported opinion met the time-frame criterion of this research. Eighteen cases were initiated by high school students, and one case was initiated by a junior high school student. One case initiated by a high school student was discarded because its opinions addressed procedural issues only,⁴⁴ leaving 18 cases for analysis.

Those 18 cases generated 27 opinions; 10 cases accounted for one opinion each, seven accounted for two opinions each, and one generated three opinions. One of the latter three opinions was discarded because it addressed procedural issues only,⁴⁵ leaving 26 opinions for analysis. The Appendix contains a list of these opinions and the case-by-case results obtained by categorizing the factors reviewed in this research.

As Table 1 indicates, 15 of the remaining 26 opinions contained rationales that relied on fuzzy logic, and 11 contained rationales not relying on fuzzy logic. More importantly, the administrator-to-student ratio of "wins" among decisions relying on fuzzy logic was 9:6; the administrator-to-student ratio among decisions not relying on fuzzy logic was 2:9 (the ratios being notably in opposite directions). Thus when

Table 1: Fuzziness of Court Rationale as a Factor in Case Outcome

		<u>Fuzzy</u>	<u>Not Fuzzy</u>
<i>Party Favored</i>	<u>Administrators</u>	9	2
	<u>Students</u>	<u>6</u>	<u>9</u>
Totals		15	11

courts employed fuzzy logic, administrators were one and one-half times more likely to win than were students. On the other hand, when courts did not employ fuzzy logic, students were four and one-half times more likely to win. Overall, results reflected a pronounced fuzzy factor effect.

Analysis by court level yielded similarly striking results. As shown in Table 2, of the 11 cases involving trial courts, administrators won five cases and students won six; however, when the fuzzy logic framework was used to analyze decisions, a pattern emerged. When trial courts used fuzzy logic, administrators won five of eight

Table 2: Fuzzy Logic and Court Level as Factors in Case Outcome

		<i>Trial Courts</i>		<i>Appellate Courts</i>	
		<u>Fuzzy</u>	<u>Not Fuzzy</u>	<u>Fuzzy</u>	<u>Not Fuzzy</u>
<i>Party Favored</i>	<u>Administrators</u>	5	0	4	2
	<u>Students</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>6</u>
Totals		8	3	7	8

cases. When trial courts avoided fuzzy logic, students won all cases. Similarly, of the 15 appellate court decisions analyzed, administrators won seven and students won eight; however, administrators won four of seven cases when fuzzy logic was used, and students won six of eight cases in which no fuzzy logic was used.

Type of materials involved also was analyzed as a factor. Twenty-three of the 26 opinions reviewed dealt with student newspapers, one concerned a yearbook, one involved a film, and one involved leaflets. The film case was placed in the official publications category because the court deciding the case noted that the film, produced by students under the supervision of a teacher, was no different from a

student publication such as a newspaper.⁴⁶ The leaflets case was placed in the "unofficial" publications category, along with underground newspaper cases.

As Table 3 indicates, results for the 13 cases concerning official publications, were mixed: administrators won five and students won eight. When the results are examined within the fuzzy logic framework, courts using fuzzy logic favor administrators four out of nine times, while courts not using fuzzy logic favor students three out of four times.

Table 3: Fuzzy Logic and Materials Involved as Factors in Case Outcome

		<i>Official Publications</i>		<i>Unofficial Publications</i>	
		<u>Fuzzy</u>	<u>Not Fuzzy</u>	<u>Fuzzy</u>	<u>Not Fuzzy</u>
<i>Party Favored</i>	<u>Administrators</u>	4	1	5	1
	<u>Students</u>	<u>5</u>	<u>3</u>	<u>1</u>	<u>6</u>
Totals		9	4	6	7

Of the 13 cases involving unofficial publications, administrators won six and students won seven, but there is a pronounced fuzzy factor at work in this category. When courts rely on fuzzy logic, they favor administrators nearly every time. When courts avoid fuzzy logic, six of seven opinions favor students. One case administrators won concerned distribution of student-produced leaflets.

Administrative action also was analyzed as a factor. As shown in Table 4, when prior restraint or censorship was the issue, court opinions favored administrators in six of 18 cases. When courts used fuzzy logic, administrators won four of nine cases, but when courts avoided fuzzy logic, students won seven of nine cases, indicating a moderate effect of the fuzzy factor. When punishment or threat of punishment was a factor, administrators won five of the eight cases litigated, and all five of those

Table 4: Fuzzy Logic and Administrative Action as Factors in Case Outcome

		<i>Censorship/Prior Restraint</i>		<i>Punishment</i>	
		<u>Fuzzy</u>	<u>Not Fuzzy</u>	<u>Fuzzy</u>	<u>Not Fuzzy</u>
<i>Party</i>	<u>Administrators</u>	4	2	5	0
<i>Favored</i>	<u>Students</u>	<u>5</u>	<u>7</u>	<u>1</u>	<u>2</u>
Totals		9	9	6	2

court opinions favoring administrators contained fuzzy logic. The only punishment-related cases won by students involved court opinions not containing fuzzy logic, and thus once again the fuzzy factor effect was pronounced.

Finally, date of decision was analyzed as pre-Bethel or post-Bethel. As may be seen from Table 5, of the 17 pre-Bethel decisions, administrators won five cases

Table 5: Fuzzy Logic and Decision Date as Factors in Case Outcome

		<i>Pre-Bethel</i>		<i>Post-Bethel</i>	
		<u>Fuzzy</u>	<u>Not Fuzzy</u>	<u>Fuzzy</u>	<u>Not Fuzzy</u>
<i>Party</i>	<u>Administrators</u>	4	1	5	1
<i>Favored</i>	<u>Students</u>	<u>4</u>	<u>8</u>	<u>2</u>	<u>1</u>
Totals		8	9	7	2

and students won 12 cases. Courts using fuzzy logic favored administrators and students equally, but courts avoiding fuzzy logic overwhelmingly favored students. Of the nine post-Bethel cases, administrators won six and students won three. Fuzzy logic analysis, however, shows that administrators won five of seven cases when courts used fuzzy logic, reflecting a pronounced fuzzy factor effect. Administrators and students evenly split the case outcomes when courts avoided fuzzy logic.

In addition to the specific analyses described above, it is instructive to note several court opinions that specifically spoke to the fuzzy factor, although none called it by name. For example, in a 1975 decision involving the fuzzy language of school guidelines that parroted the *Tinker* standard, the U. S. Court of Appeals for the Fourth Circuit said, "A crucial flaw exists in this directive since it gives no guidance whatsoever as to what amounts to a 'substantial disruption of or material interference with' school activities; and equally fatal, it fails to detail the criteria by which an administrator might reasonably predict the occurrence of such a disruption."⁴⁷ One year later, the U. S. District Court for the Southern District of New York wrote that "...*Tinker* did not delineate the circumstances under which the school authorities may proscribe students' First Amendment rights."⁴⁸

In 1977, the U. S. District Court for the Eastern District of Virginia attacked a school's student publications guidelines for being "...a monument to vagueness."⁴⁹ The guidelines, sounding a lot like those suggested by the U. S. Supreme Court in *Hazelwood*, said that "Student publications must conform to the 'journalistic standards of accuracy, taste, and decency maintained by the newspapers in general circulation in [the local town].'"⁵⁰ In 1984, another U. S. District Court, this time in Maine, echoed such sentiments in describing another *Hazelwood*-like test for yearbook quotes. The court said, "Rejection of Plaintiff's designated quotation on the basis of a standard of 'poor taste' or 'appropriateness'...fixes no discrete, objective limits to the determination of what may or may not be published therein. That test must always be, by such standards, completely subjective in at least two respects; what the official making the decision as to publishability [sic] thinks to be 'tasteful' or 'appropriate' and what that official believes others may think to be so."⁵¹

Three years later, the U. S. District Court for the Western District of Washington also struggled with the fuzziness of the *Tinker* standard. In commenting on a school guideline consistent with that standard, the court said, "The language...is consistent with the standard explicated in *Tinker* and its progeny. However, it would benefit students and school authorities if the section...were elaborated to give guidance by way of examples or descriptions as to what amounts to a substantial disruption of school activities."⁵²

Most recently, in 1994, the Supreme Court of New Jersey was faced with deciding whether a school could use a vague policy to enforce what it said was a "legitimate pedagogical concern" in prohibiting a junior high school student from publishing in the school newspaper reviews of R-rated movies.⁵³ In ruling against the school, the court said, "...the record suggests only that such a policy, if it exists, is vaguely defined and loosely applied and that its underlying educational concerns remained essentially undefined and speculative."⁵⁴ A lower court that had heard the case and also had ruled against the school said, "For the defendants [the school board] in the instant matter to say that censorship here was justified by pedagogical concerns does not make it so."⁵⁵

Discussion and Conclusions

In the aggregate, overall data simply show the existence of a pronounced fuzzy factor effect. Administrators benefit primarily when courts rely on fuzzy rationales and students benefit primarily when courts avoid fuzzy rationales. The effect appears to cut across court level, and it remains pronounced both when unofficial publications are at issue and when punishment is the administrative action of choice.

Perhaps the best explanation for the fuzzy factor effect is that fuzzy sets inherently favor administrators. This is true because when a court accepts a fuzzy set as the framework in which to make its decision, administrators gain the opportunity to stretch the boundaries of student publications governance by making the set of forbidden materials more inclusive than it ideally should be; there exist no well-defined limits to administrative control—nothing to which students can point and say, "The guidelines do not specify this." Additionally, it might be easier to convince courts of what should be included in a fuzzy set than it is to convince courts of what a fuzzy set should exclude.

Analysis of the effect on other variables is more complex. For example, there is a moderate fuzzy factor effect when official publications are involved, but the true strength of the effect is provided by students winning three times as often as administrators when court rationale is not fuzzy. When courts rely on a fuzzy rationale, neither administrators nor students are favored in any pronounced way. Similar results were obtained when administrators chose censorship/prior restraint to govern student publications, i.e., the moderate effect was driven by students winning more than twice as many decisions as administrators when court rationale was not fuzzy.

One explanation why the fuzzy factor effect is more pronounced when unofficial publications (as opposed to official publications) are involved is that the U. S. Supreme Court has recognized less administrative power concerning unofficial publications. This guidance has manifested itself in two ways: one is that the Court in both *Tinker* and *Hazelwood* spoke strongly about the protections enjoyed by a student's expression that merely *happens* to occur on school premises, i.e., that expression which does not bear the imprimatur of the school.⁵⁵ The other

manifestation has been Court language, particularly in *Bethel* and in *Hazelwood*, that provides administrators with broad powers over student expression sponsored by public schools. Thus to succeed in controlling an unofficial publication, administrators' primary hope seems to rely upon a court's acceptance of fuzzy logic, which allows for inclusiveness of poorly defined reasons to censor.

Concerning results that involve administrative action, it might be argued that because for nearly 70 years courts have required a heavy burden of proof to uphold prior restraint,⁵⁶ administrators have a worse chance of winning, regardless of the amount of fuzz a court might recognize as legitimate. When punishment is at issue, however, administrators must rely upon fuzzy logic to win because clearly defined logic favors students.

When date of decision is factored into the mix, results are most unusual. There is a minimal fuzzy factor effect in pre-*Bethel* cases involving fuzzy logic and virtually no such effect in post-*Bethel* cases not involving fuzzy logic; however, there is a pronounced fuzzy factor effect both in pre-*Bethel* cases that do not involve fuzzy logic and in post-*Bethel* cases that do involve fuzzy logic. Students are favored heavily by pre-*Bethel*, non-fuzzy opinions and administrators are favored heavily in post-*Bethel*, fuzzy opinions.

These results probably occur for the same reasons that explained results of the overall fuzzy factor effect: fuzziness inherently favors administrators. As litigation moved into the post-*Bethel* era, administrators were armed with the extreme fuzzy logic provided by the *Hazelwood* opinion, and thus they won a much higher percentage of cases than they won using the moderately fuzzy language of *Tinker*. Also, that administrators did better in non-fuzzy cases during the post-*Bethel*

era than they did in non-fuzzy cases in the pre-*Bethel* era merely may be a reflection of the small number of cases analyzed.

In considering the results of this study, and the above-noted lower court criticisms both of the *Tinker* standard and of school district applications of the *Hazelwood* standard, it is accurate to conclude that in a practical sense, student press freedom suffers when courts embrace fuzzy logic. It also is clear that such suffering has increased over time, particularly since the *Bethel* decision.

Most importantly, it is evident that when administrators find courts sympathetic to the fuzzy logic promulgated by the U. S. Supreme Court in its student expression cases, it is nearly impossible for students to prevail. It is, therefore, advisable for students who sue their school administrators to formulate arguments that ignore the *Tinker*, *Bethel*, and *Hazelwood* language. Instead, students should defend their press freedom by relying on precise language in statutes and other documents.

In states without statutory protection for student expression, it would be helpful for students and their advisers to create, in cooperation with school administrators, precisely written student publications guidelines that ignore all references to "legitimate pedagogical concerns," "civility," "fundamental values," and "material and substantial disruption." A good place to start, and to end, would be with the phrase, "Students and teachers do not shed their constitutional rights to freedom of speech or expression at the schoolhouse gate."

Future research in the fuzzy logic area might examine 1) non-university, public school student press cases from the early 1960s to the mid-1970s, to evaluate any immediate fuzzy logic effects of *Tinker*; 2) university cases from the past 40 years, to determine post-secondary trends relating to fuzzy logic; and 3) student-initiated symbolic speech cases, to examine fuzzy logic effects on case outcomes in this area.

Endnotes

- ¹*Brown v. Board of Education*, 347 U. S. 483, 493 (1954)
- ²See *Ambach v. Norwich*, 441 U. S. 68, 76-77 (1979) for a listing of cases and social science publications supporting this theme.
- ³393 U. S. 503.
- ⁴L.A. Zadeh, "Fuzzy Sets." *Information and Control* 8 (1965): 338-53.
- ⁵For a detailed explanation of this phenomenon, see B. Kosko, and S. Isaka, "Fuzzy Logic." *Scientific American* 269 (July 1993): 76-81.
- ⁶D. McNeill, and P. Freiberger, *Fuzzy Logic* (New York: Simon & Schuster, 1993).
- ⁷McNeill and Freiberger, *Fuzzy Logic*, 12.
- ⁸McNeill and Freiberger, *Fuzzy Logic*, 12.
- ⁹McNeill and Freiberger, *Fuzzy Logic*, 66.
- ¹⁰B. Kosko, *Fuzzy Thinking: The New Science of Fuzzy Logic* (NY: Hyperion, 1993). For a good explanation of fuzzy logic, see chapters 1-2.
- ¹¹Kosko, *Fuzzy Thinking: The New Science of Fuzzy Logic*, 263.
- ¹²Kosko, *Fuzzy Thinking: The New Science of Fuzzy Logic*, 178.
- ¹³L.M. Solan, *The Language of Judges* (Chicago: The University of Chicago Press, 1993). For a broader discussion of both the structure of language in the judicial process and the structuring of discourse in the judicial process, see J. N. Levi, and A. G. Walker, *Language in the Judicial Process* (NY: Plenum Press, 1990).
- ¹⁴Solan, *The Language of Judges*, 105.
- ¹⁵S.D. Jamar, "This Article Has No Footnotes: An Essay on RFRA and the Limits of Logic in the Law." *Stetson Law Review* 27 (Fall 1997): 559-587.
- ¹⁶Jamar, "This Article Has No Footnotes," 560.
- ¹⁷J. Levin, *How Judges Reason* (NY: Peter Lang Publishing, Inc., 1992).

¹⁸Levin, *How Judges Reason*, 253. Also, for a discussion of the consequences of distortions of the internal logic of the legal system, see E. Orucu, "An Exercise on the Internal Logic of Legal Systems," *Legal Studies* 7 (November 1987): 310-318.

¹⁹L.C. Ikemoto, "The Fuzzy Logic of Race and Gender in the Mismeasure of Asian American Women's Health Needs," *Univ. of Cincinnati Law Review* 65 (Spring 1997): 799-824.

²⁰D.W. Hadden, "Michigan Nuisance Law: Fuzzy Logic at Work," *Michigan Bar Journal* 76 (February 1997): 187-189.

²¹D.H. Rosenbloom, "Fuzzy Law from the High Court," *Public Administration Review* 54 (November/December 1994): 503-506.

²²J.L. Flynn, "Mixed-Motive Causation Under the ADA: Linked Statutes, Fuzzy Thinking, and Clear Statements," *The Georgetown Law Journal* 83 (June 1995), 2009-2067.

²³D.J. Merritt, "The Fuzzy Logic of Federalism," *Case Western Reserve Law Review* 46 (Spring 1996): 685-694.

²⁴For example, see J. Nelson (Ed.), *Captive Voices: High School Journalism in America* (NY: Schocken Books, 1974); R. Trager, *Student Press Rights: Struggles in Scholastic Journalism* (Urbana, IL: Journalism Education Association/ERIC Clearinghouse on Reading and Communication Skills, 1974); R. Trager and D.L. Dickerson, "Prior Restraint in High School: Law, Attitudes, and Practice," *Journalism Quarterly* 57 (Spring 1980): 135-138; N.D. Kristof, *Freedom of the High School Press* (Lanham, MD: University Press of America, 1983); and *Law of the Student Press* (Arlington, VA: Student Press Law Center, 1994).

²⁵For example, see J.W. Click and L.L. Kopenhaver, "Principals' and Newspaper Advisers' Attitudes Toward Freedom of the Student Press in the United States" (paper presented at the annual meeting of the AEJ, Norman, OK, August 1986 (ERIC Document Reproduction Service No. ED 269807)); J.W. Click and L.L. Kopenhaver, "Opinions of Principals and Newspaper Advisers Toward Student Press Freedom and Advisers' Responsibilities Following *Hazelwood v. Kuhlmeier*" (paper presented at the annual meeting of the AEJM, Minneapolis, MN, 1990); T. Dickson "Changes in Content and Control of the High School Press in the *Hazelwood* Era" (paper presented at the mid-winter meeting of the Secondary Education Division of the Association for Education in Journalism and Mass Communication, Miami, FL, January 1991 (ERIC Document Reproduction Service No. ED 327877)); and T. Dickson and M. Paxton, "Determining the 'Hazelwood Effect' and Factors Affecting

Advisers' Attitudes Toward Scholastic Press Freedom: Should We Believe Chicken Little or Dr. Pangloss?" Paper presented at the mid-winter meeting of the Scholastic Journalism Division of the Association for Education in Journalism and Mass Communication, Indianapolis, Ind., 1997.

²⁶For example, see Plopper, B. L. "A Synthesis Model for Passing State Student Press Legislation." *Journalism & Mass Communication Educator* 51, No. 1 (Spring 1996), 61-67; and Plopper, B. L. and Downs, W. D. Jr. "Arkansas Student Publications Act: Implementation and Effects." *Journalism & Mass Communication Educator* 53, No. 1, (Spring 1998), 74-84.

²⁷393 U. S. 503 (1969). This was the first case in which the U. S. Supreme Court decided a student issue that involved students taking positive expressive action. Earlier, in the 1940s, the Court had decided cases in which students had refused to take action, e.g., recite the Pledge of Allegiance to the Flag (*Minersville School District v. Gobitis*, 310 U. S. 586 (1940) (deciding that students could be forced to salute the flag) and *West Virginia State Board of Education v. Barnette*, 319 U. S. 624 (1943) (deciding that students could not be forced to salute the flag)).

²⁸393 U. S. at 506.

²⁹H. C. Black, *Black's Law Dictionary*. St. Paul, Minn.: West Publishing Co., 1979.

³⁰393 U. S. at 505.

³¹410 U. S. 667 (1973).

³²408 U. S. 169 (1972).

³³410 U. S. at 669-670, quoting *Healy* at 180.

³⁴*Id.* at 670.

³⁵See notes 1-2, above.

³⁶478 U. S. 675.

³⁷Particularly relevant to this discussion are the decisions in *Ambach v. Norwick*, 441 U. S. 68 (1979) (upholding a New York statute requiring teachers to be citizens), *Board of Education v. Pico*, 457 U. S. 853 (1982) (denying school administrators an arbitrary right to remove objectionable books from the school library), and *New Jersey v. T.L.O.*, 469 U. S. 325 (1985) (upholding a school's right to

search a student's purse under a "reasonable suspicion" standard). In the 1990s, the Court continued to adhere to the values theme (see *Veronia School District 47J v. Acton*, 115 S. Ct. 2386 (1995) (upholding a school's right to perform random drug urinalysis tests on athletes). For commentary on this issue, see Ingber, S. "Socialization, Indoctrination, or the 'Pall of Orthodoxy': Value Training in the Public Schools." *University of Illinois Law Review*, 1987, No. 1, 15-95 and Dupre, A. P. "Should Students Have Constitutional Rights? Keeping Order in the Public Schools." *George Washington Law Review* 65, No. 1 (November 1996), 49-105.

³⁸484 U. S. 260.

³⁹*Id.* at 272-273.

⁴⁰*Id.* at 273.

⁴¹For example, although the 7th U. S. Circuit Court of Appeals and the U. S. Supreme Court issued reported opinions in *Jacobs v. Board of School Commissioners* in 1975, the U. S. District Court opinion in this case was reported in 1973. This case, therefore, was excluded from the study.

⁴²Several other student expression issues that were not included in this analysis involved right to distribute commercial or religious materials, right to use a school's public address system for pre-school prayers, right to wear pre-fabricated buttons containing political messages, right to choose a term paper topic, and right of non-school organizations to meet on school property.

⁴³Because the *Hazelwood v. Kuhlmeier* 8th U. S. Circuit Court of Appeals decision was handed down on the same day (July 7, 1986) that the U. S. Supreme Court handed down its *Bethel* decision, this *Hazelwood* decision was counted in the pre-*Bethel* category.

⁴⁴*Barcik v. Kubiacyk*, 873 P. 2d 456 (Or. App. 1994), reversed in part and affirmed in part, 895 P. 2d 765 (Or. 1995), affirmed, 912 P. 2d 408 (Or. App. 1996).

⁴⁵*Kuhlmeier v. Hazelwood School District*, 578 F. Supp. 1286 (E.D.Mo. 1984).

⁴⁶*Lopez v. Tulare Joint Union High School District Board of Trustees*, 40 Cal. Rptr. 2d 762 (Cal. App. 1995) at 778.

⁴⁷*Nitzberg v. Parks*, 525 F. 2d 378, 383 (4th Cir. 1975).

⁴⁸*Trachtman v. Anker*, 426 F. Supp. 198, 201 (S.D.N.Y. 1976).

⁴⁹*Leibner v. Sharbaugh*, 429 F. Supp. 744, 748 (E.D.Vir. 1977).

⁵⁰*Id.* at 748.

⁵¹*Stanton v. Brunswick School Department*, 577 F. Supp. 1560, 1574 (D.Me. 1984).

⁵²*Burch v. Barker*, 651 F. Supp. 1149, 1156 (W.D.Wash. 1987).

⁵³*Desilets v. Clearview Regional Board of Education*, 647 A.2d 150 (N.J. 1994).

⁵⁴*Id.* at 154.

⁵⁵*Hazelwood v. Kuhlmeier*, 484 U. S. 260, 270-271 (1988).

⁵⁶See *Near v. Minnesota*, 383 U. S. 697 (1931), in which the Court strongly opposed prior restraint of the press.

List of Evaluated Opinions

- Boucher v. School Board of the School District of Greenfield*, 134 F. 3d 821 (7th Cir. 1998).
- Bright v. Los Angeles Unified School District*, 124 Cal. Rptr. 508 (Cal. App. 1975), *reversed*, 556 P.2d 1090 (1976).
- Burch v. Barker*, 651 F. Supp. 1149 (W.D.Wash. 1987), *reversed*, 861 F. 2d 1149 (9th Cir. 1988).
- Bystrom (Cory) v. Fridley High School*, 822 F. 2d 747 (8th Cir. 1987).
- Bystrom (Janet) v. Fridley High School*, 686 F. Supp. 1387 (D.Minn. 1987).
- Desilets v. Clearview Regional Board of Education*, 630 A. 2d 333 (N.J.Super.A.D. 1993), *affirmed*, 647 A.2d 150 (N.J. 1994).
- Dodd v. Rambis*, 535 F. Supp. 23 (S.D.Ind. 1981).
- Frasca v. Andrews*, 463 F. Supp. 1043 (E.D.N.Y. 1979).
- Gambino v. Fairfax County School Board*, 429 F. Supp. 731 (E.D.Vir. 1977), *affirmed*, 564 F. 2d 157 (4th Cir. 1977).
- Kuhlmeier v. Hazelwood School District*, 607 F. Supp. 1450 (E.D.Mo. 1985), *reversed*, 795 F. 2d 1368 (8th Cir. 1986).
- Leeb v. DeLong*, 243 Cal. Rptr. 494 (Cal. App. 1988).
- Leibner v. Sharbaugh*, 429 F. Supp. 744 (E.D.Vir. 1977).
- Lopez v. Tulare Joint Union High School District Board of Trustees*, 40 Cal. Rptr. 2d 762 (Cal. App. 1995).
- Nitzberg v. Parks*, 525 F. 2d 378 (4th Cir. 1975).
- Reineke v. Cobb County School District*, 484 F. Supp. 1252 (N.D.Ga. 1980).
- Stanton v. Brunswick School Department*, 577 F. Supp. 1560 (D.Me. 1984).
- Thomas v. Board of Education, Granville Central School District*, 478 F. Supp. 114 (N.D.N.Y. 1979), *reversed*, 607 F. 2d 1043 (2d Cir. 1979).
- Trachtman v. Anker*, 426 F. Supp. 198 (S.D.N.Y. 1976), *reversed*, 563 F. 2d 512 (2d Cir. 1977).
- Williams v. Spencer*, 622 F. 2d 1200 (4th Cir. 1980).

Appendix: Case-by-case data for public school student publications decisions, 1975-1999

Case Name	Court Level	Materials Involved	Administrative Action Taken	Year Decided	Fuzzy Factor	Party Favored
	(T)rial (A)ppellate	(O)fficial (U)nderground	(C)ensorship or Prior Restraint (P)unishment		(F)uzzy (N)ot (F)uzzy	(A)dministrators (S)tudents
Trachtman	T	O (newspaper)	C	1976	F	S
Gambino	T	O (newspaper)	C	1977	NF	S
Leibner	T	U (newspaper)	C	1977	NF	S
Frasca	T	O (newspaper)	C	1979	F	A
Thomas	T	U (newspaper)	P	1979	F	S
Reineke	T	O (newspaper)	C	1980	F	S
Dodd	T	U (leaflets)	P	1981	F	A
Stanton	T	O (yearbook)	C	1984	NF	S
Kuhlmeier	T	O (newspaper)	C	1985	F	A
Burch	T	U (newspaper)	P	1987	F	A
Bystrom	T	U (newspaper)	P	1987	F	A
Nitzberg	A	U (newspaper)	C	1975	NF	S
Bright	A	U (newspaper)	C	1975	NF	S
Bright	A	U (newspaper)	C	1976	NF	S
Trachtman	A	O (newspaper)	C	1977	F	A
Gambino	A	O (newspaper)	C	1977	NF	S
Thomas	A	U (newspaper)	P	1979	NF	S
Williams	A	U (newspaper)	C	1980	NF	A
Kuhlmeier	A	O (newspaper)	C	1986	F	S
Bystrom	A	U (newspaper)	P	1987	F	A
Leeb	A	O (newspaper)	C	1988	NF	A
Burch	A	U (newspaper)	P	1988	NF	S
Desilets	A	O (newspaper)	C	1993	F	S
Desilets	A	O (newspaper)	C	1994	F	S
Lopez	A	O (film)	C	1995	F	A
Boucher	A	U (newspaper)	P	1998	F	A